

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

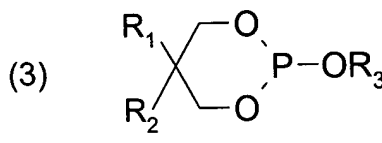
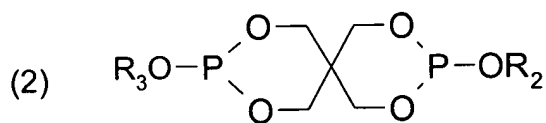
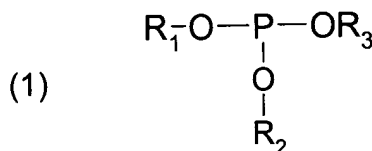
LISTING OF CLAIMS:

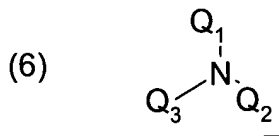
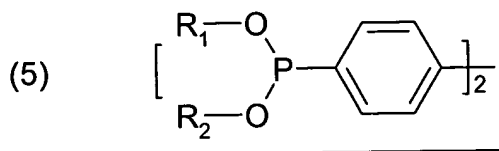
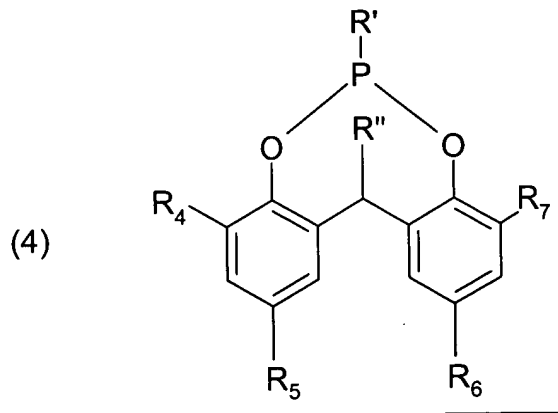
Claim 1 (currently amended): A polymer blend comprising a mixture of:

- (A) at least one polyester prepared by the reaction of at least one diol with at least one dicarboxylic acid or dialkyl ester thereof in the presence of a metallic catalyst;
- (B) at least one ~~phosphite ester~~ phosphorus-containing compound; and
- (C) at least one hindered amine light stabilizer; and
- (D) at least one polycarbonate,

wherein the phosphorus-containing compound is selected from the formulas (1) -

(6):





wherein

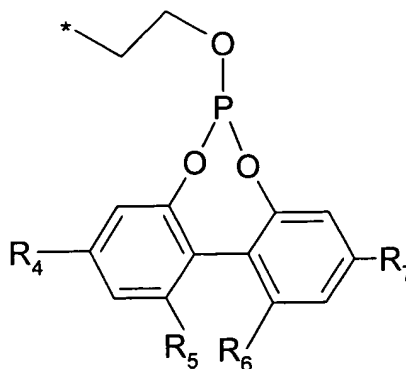
R₁, R₂ and R₃ are independently selected from C₁-C₂₂-alkyl, substituted C₁-C₂₂-alkyl, C₃-C₈-cycloalkyl, substituted C₃-C₈-cycloalkyl, and heteroaryl;

R' is selected from halogen and OR₁;

R'', R₄, R₅, R₆, and R₇ are independently selected from hydrogen, C₁-C₂₂-alkyl, substituted C₁-C₂₂-alkyl, C₃-C₈-cycloalkyl, substituted C₃-C₈-cycloalkyl, heteroaryl, and aryl;

each Q₁, Q₂ and Q₃ group independently is radical A, wherein radical A has the following structure:

Radical A =



Claim 2 (canceled)

Claim 3 (currently amended): [[A]] The polymer blend according to Claim 2 1
 wherein the at least one polyester comprises:

- (1) diacid residues comprising at least 50 mole percent of terephthalic acid residues, cyclohexanedicarboxylic acid residues or a mixture thereof; and
- (2) diol residues comprising at least 50 mole percent of ethylene glycol residues, cyclohexanedimethanol residues, or a mixture thereof;

wherein the total of the diacid residues is equal to 100 mole percent and the total of the diol residues also is equal to 100 mole percent.

Claim 4 (currently amended): [[A]] The polymer blend according to Claim 3
 wherein the polyester comprises up to about 200 ppmw Ti, Co and/or Mn residues.

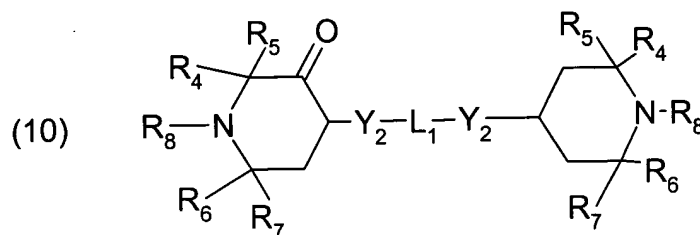
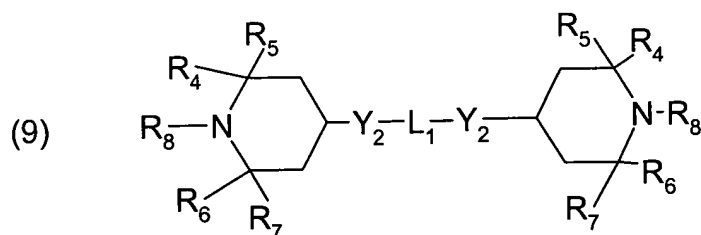
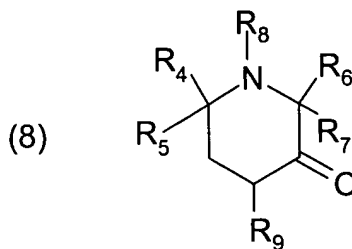
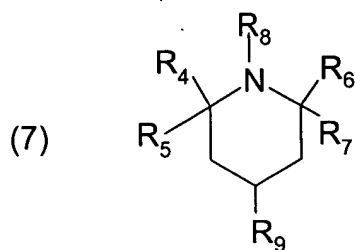
Claim 5 (currently amended): A polymer blend comprising:

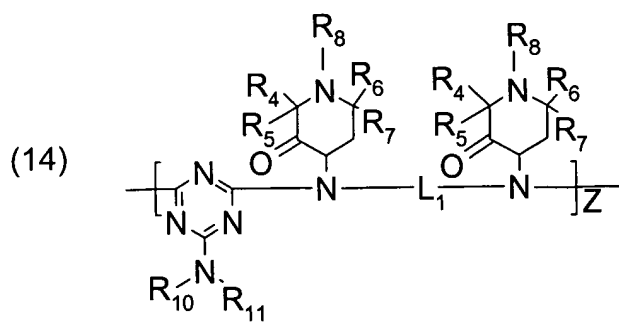
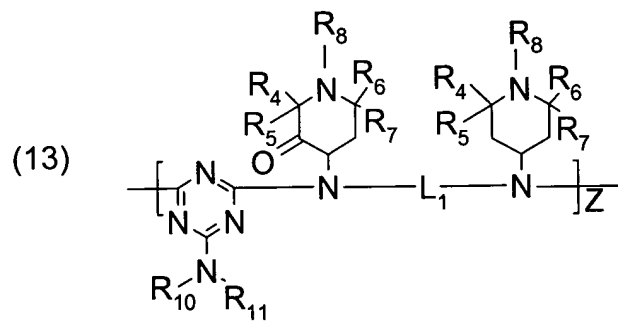
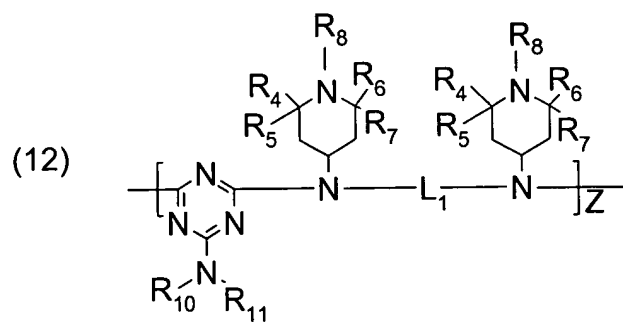
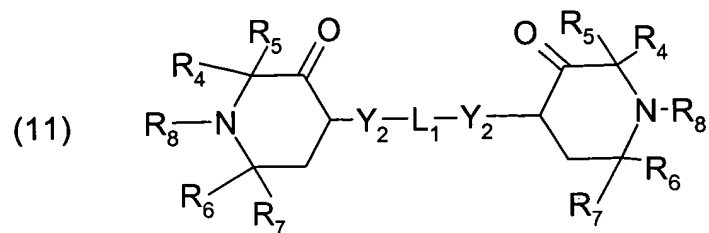
- (A) at least one polyester comprising:
 - (1) diacid residues comprising at least 50 mole percent of residue of a diacid selected from 1,4-cyclohexanedicarboxylic acid, terephthalic acid and isophthalic acid or a mixture thereof; and
 - (2) diol residues comprising at least 50 mole percent of ethylene glycol residues, cyclohexanedimethanol residues, or a mixture thereof;

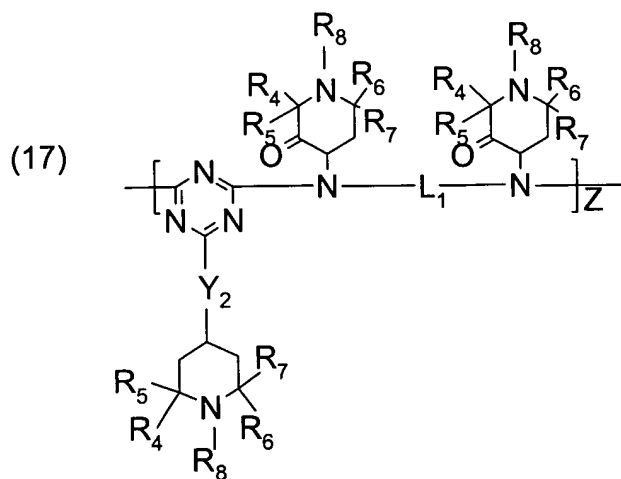
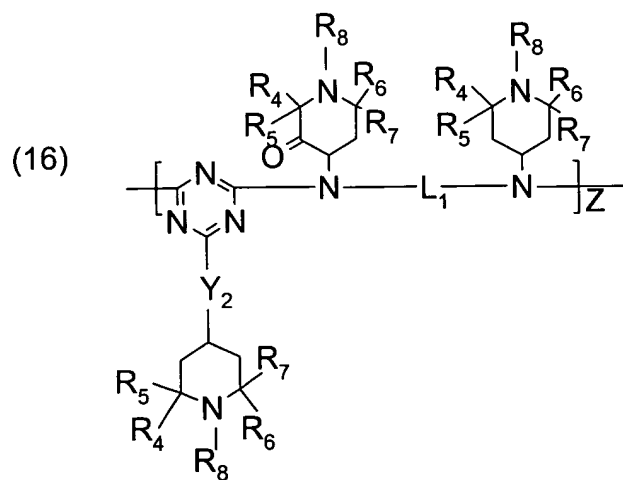
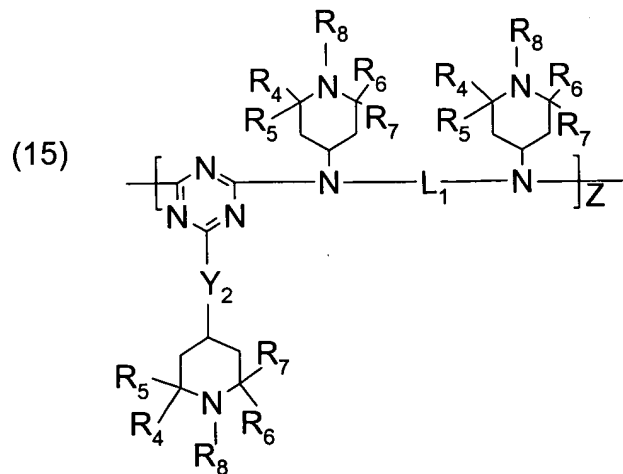
based on a total of 100 mole percent of diacid residues and a total of 100 mole percent of diol residues;

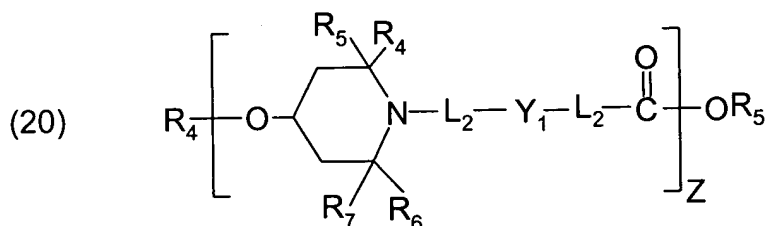
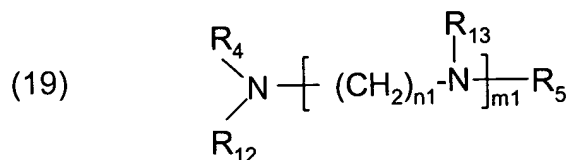
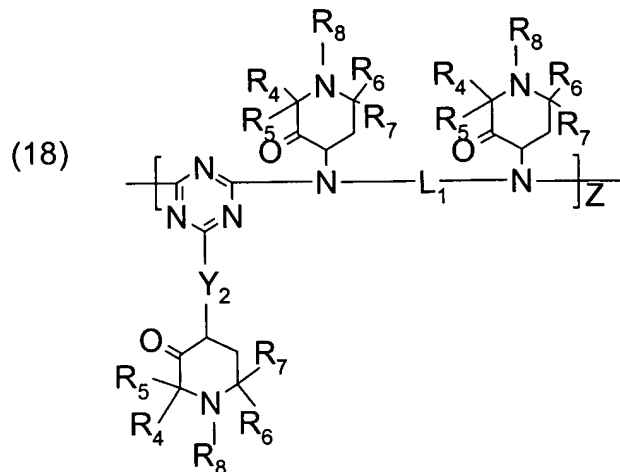
(B) 0.01 to 0.5 weight percent of at least one ~~phosphite ester~~ phosphorus-containing compound based on the total weight of the blend; and

(C) 0.01 to 1.0 weight percent of at least one hindered amine light stabilizer based on the total weight of the blend, wherein the at least one hindered amine light stabilizer is selected from the following formulae:









wherein

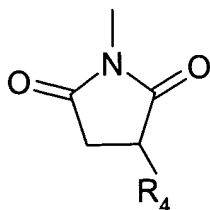
~~R₁, R₂ and R₃ are independently selected from C₁-C₂₂-alkyl, substituted C₁-C₂₂-alkyl, C₃-C₈-cycloalkyl, substituted C₃-C₈-cycloalkyl, heteroaryl, and aryl;~~

~~R' is selected from halogen or OR₄;~~

[[R",]] R₄, R₅ R₆, and R₇ are independently selected from hydrogen, C₁-C₂₂-alkyl, substituted C₁-C₂₂-alkyl, C₃-C₈-cycloalkyl, substituted C₃-C₈-cycloalkyl, heteroaryl, and aryl;

R₈ is selected from hydrogen, -OR₆, C₁-C₂₂-alkyl, substituted C₁-C₂₂-alkyl, C₃-C₈-cycloalkyl, and substituted C₃-C₈-cycloalkyl;

R₉ is selected from hydrogen, $[[;]]$ C₁-C₂₂-alkyl, substituted C₁-C₂₂-alkyl, C₃-C₈-cycloalkyl, substituted C₃-C₈-cycloalkyl, heteroaryl, aryl, -Y₁-R₄, and or a succinimido group having the formula:



R₁₀ and R₁₁ are independently selected from hydrogen, C₁-C₂₂-alkyl, substituted C₁-C₂₂-alkyl, C₃-C₈-cycloalkyl, and substituted C₃-C₈-cycloalkyl; R₁₀ and R₁₁ collectively may represent a divalent group forming a ring with the nitrogen atom to which they are attached, ~~e.g., morpholino, piperidino and the like;~~

L₁ is a divalent linking group selected from C₂-C₂₂-alkylene, $[[;]]$ -(CH₂CH₂-Y₁)₁₋₃-CH₂CH₂-, $[[;]]$ C₃-C₈-cycloalkylene, $[[;]]$ arylene, $[[; \text{ or}]]$ and -CO-L₂-OC-;

L₂ is selected from C₁-C₂₂-alkylene, arylene, -(CH₂CH₂-Y₁)₁₋₃-CH₂CH₂-, and C₃-C₈-cycloalkylene;

Y₁ is selected from -OC(O)-, -NHC(O)-, -O-, -S-, and -N(R₄)-;

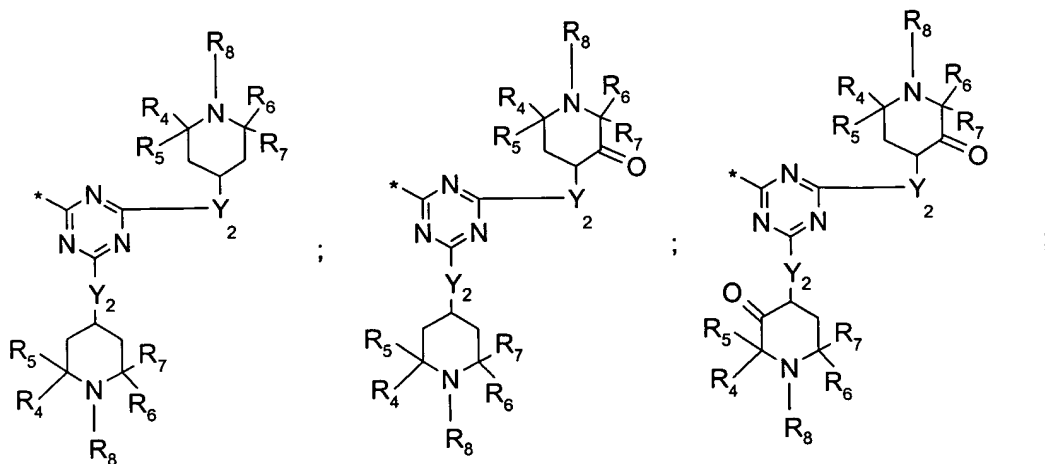
Y₂ is selected from -O- ~~or~~ and -N(R₄)-;

Z is a positive integer of up to about 20, ~~preferably up to about 6;~~

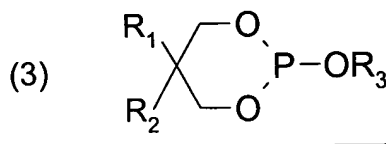
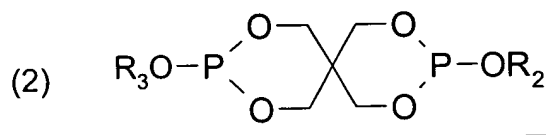
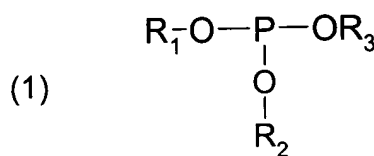
m₁ is selected from 0 to about 10;

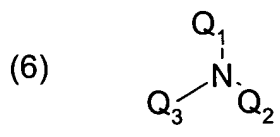
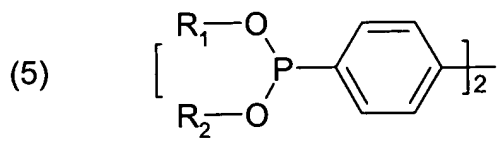
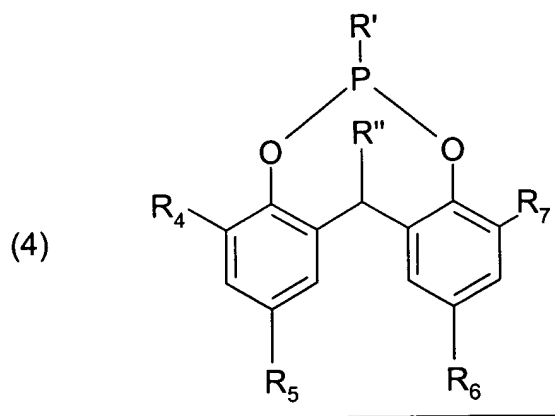
n₁ is a positive integer selected from 2 to about 12;

R₁₂ $[[;]]$ and R₁₃ are independently selected from hydrogen, C₁-C₂₂-alkyl, substituted C₁-C₂₂-alkyl, heteroaryl, aryl, and radical B wherein radical B is selected from the following structures:



~~Radical B structures~~ wherein * designates the position of attachment [[.]] and wherein at least one of R₁₂ and R₁₃ is radical B_i and
 (D) at least one polycarbonate,
 wherein the phosphorus-containing compound is selected from the formulas (1) - (6):





wherein

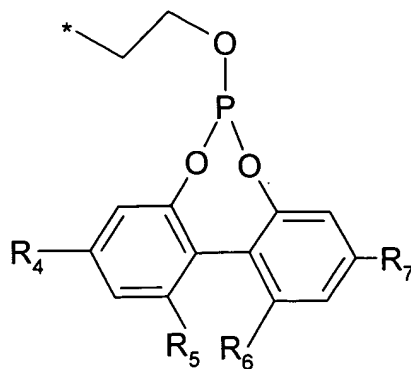
R₁, R₂ and R₃ are independently selected from C₁-C₂₂-alkyl, substituted C₁-C₂₂-alkyl, C₃-C₈-cycloalkyl, substituted C₃-C₈-cycloalkyl, and heteroaryl;

R' is selected from halogen and OR₁;

R'', R₄, R₅, R₆, and R₇ are independently selected from hydrogen, C₁-C₂₂-alkyl, substituted C₁-C₂₂-alkyl, C₃-C₈-cycloalkyl, substituted C₃-C₈-cycloalkyl, heteroaryl, and aryl;

each Q₁, Q₂ and Q₃ group independently is radical A, wherein radical A has the following structure:

Radical A =



Claim 6 (original): The polymer blend of Claim 5 wherein R₈ is hydrogen or alkyl.

Claim 7 (currently amended): The polymer blend of Claim 6 wherein the polyester of component (A) has an inherent viscosity of about 0.4 to 1.2 dL/g measured at 25°C in a 60/40 ratio by weight of phenol/tetrachloroethane and comprises:

- (1) diacid residues comprising about 80 to 100 mole percent of terephthalic acid residues and about 0 to 20 mole percent of isophthalic acid residues; and
- (2) diol residues comprising about 40 to 100 mole percent of 1,4-cyclohexanedimethanol residues and 0 to about 60 mole percent of ethylene glycol residues and component (B) comprises 0.05 to 0.5 weight percent of at least one ~~phosphite ester~~ phosphorus-containing compound and component (C) comprises 0.05 to 1.0 weight percent of at least one hindered amine light stabilizer based on the total weight of the composition.

Claim 8 (currently amended): The polymer blend of Claim 7 wherein the polyester of component (A) has an inherent viscosity of about 0.4 to 0.8 dL/g measured at 25°C in a 60/40 ratio by weight of phenol/tetrachloroethane and comprises:

- (1) diacid residues comprising about 80 to 100 mole percent of terephthalic acid residues and about 0 to 20 mole percent of isophthalic acid residues; and
- (2) diol residues comprising about 55 to 80 mole percent of 1,4-cyclohexanedimethanol residues and about 20 to about 45 mole percent of ethylene glycol residues.

Claim 9 (currently amended): [[A]] The polymer blend of Claim 5 wherein the polyester of component (A) has an inherent viscosity of about 0.4 to 0.8 dL/g measured at 25°C in a 60/40 ratio by weight of phenol/tetrachloroethane and comprises:

- (1) diacid residues comprising about 65 to 83 mole percent of terephthalic acid residues and about 35 to 17 mole percent of isophthalic acid residues; and
- (2) diol residues comprising about 80 to 100 mole percent of 1,4-cyclohexanedimethanol residues and about 0 to about 20 mole percent of ethylene glycol residues.

Claim 10 (currently amended): The polymer blend of Claim 9 wherein the polyester of component (A) comprises:

- (1) diacid residues comprising about 70 to 80 mole percent of terephthalic acid residues and about 30 to 20 mole percent of isophthalic acid residues; and
- (2) diol residues comprising about 90 to 100 mole percent of 1,4-cyclohexanedimethanol residues and 0 to about 10 mole percent of ethylene glycol residues.

Claim 11 (currently amended): The polymer blend of Claim 5 wherein the polyester of component (A) has an inherent viscosity of about 0.4 to 1.2 dL/g measured at 25°C in a 60/40 ratio by weight of phenol/tetrachloroethane and comprises:

- (1) diacid residues comprising at least about 80 mole percent of 1,4-cyclohexanedicarboxylic acid residues; and
- (2) diol residues comprising at least about 80 mole percent of 1,4-cyclohexanedimethanol residues.

Claim 12 (currently amended): The polymer blend of Claim 11 wherein the polyester of component (A) comprises:

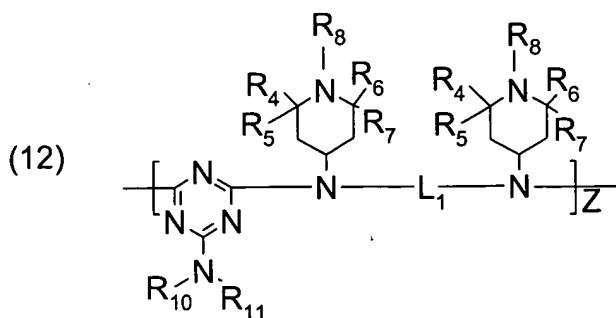
- (1) diacid residues comprising about 90 to 100 mole percent of 1,4-cyclohexanedicarboxylic acid residues; and
- (2) diol residues comprising about 90 to 100 mole percent of 1,4-cyclohexanedimethanol residues.

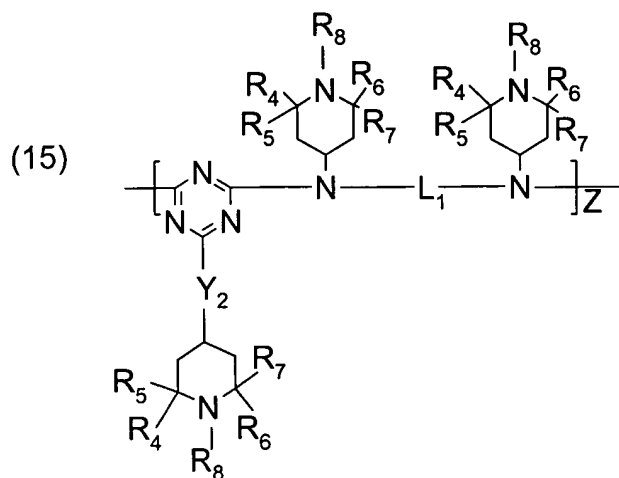
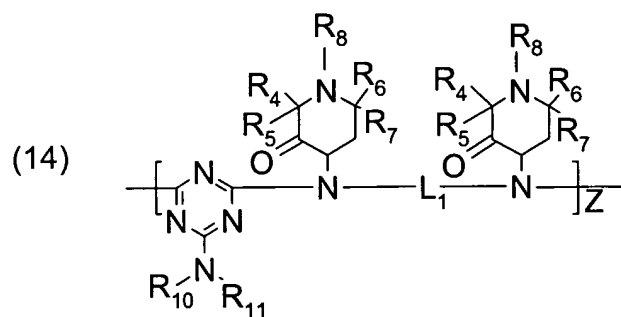
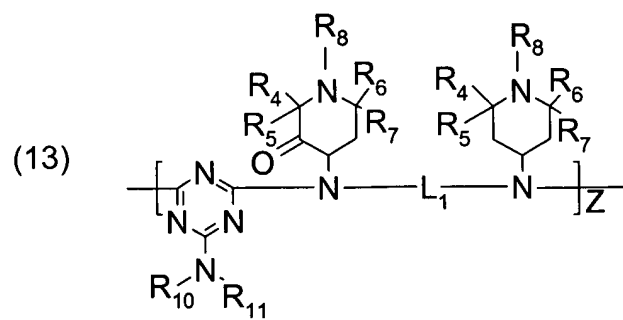
Claim 13 (currently amended): The polymer blend of Claim 12 wherein the polyester of component (A) comprises:

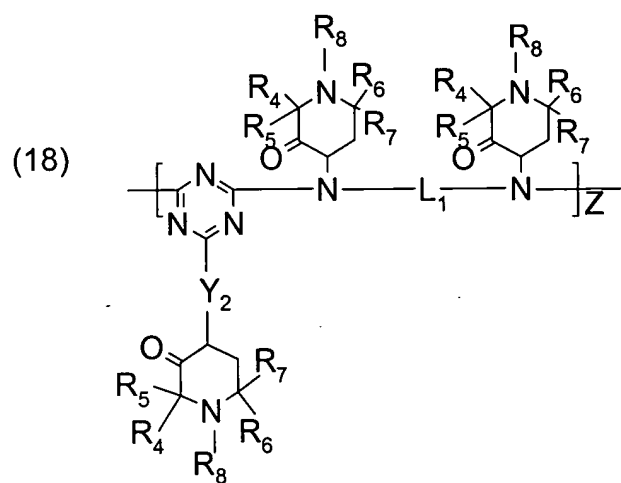
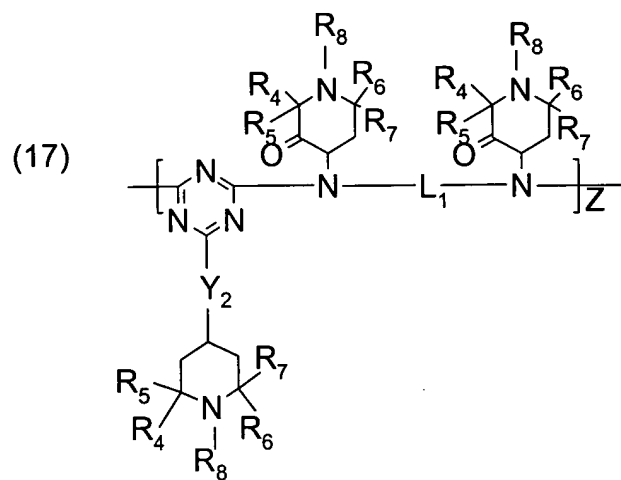
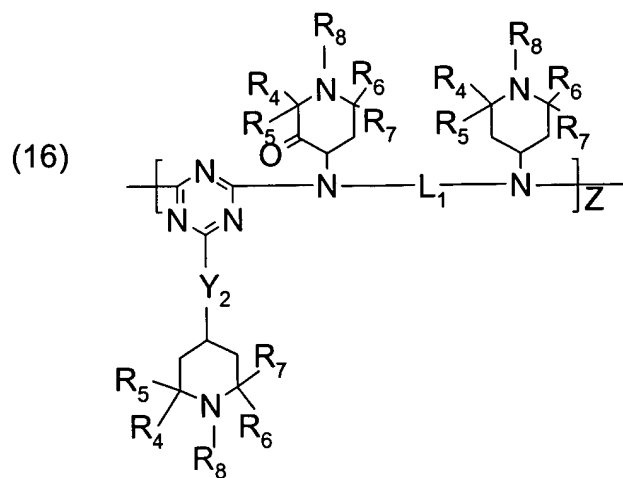
- (1) diacid residues comprising about 100 mole percent of 1,4-cyclohexanedicarboxylic acid residues; and
- (2) diol residues comprising about 100 mole percent of 1,4-cyclohexanedimethanol residues.

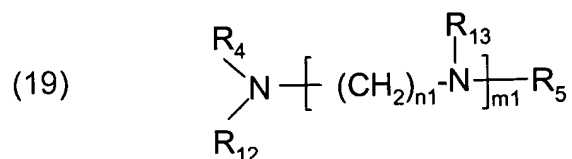
Claim 14 (currently amended): A polymer blend comprising a mixture of the following:

- (A) at least one polyester having an inherent viscosity of about 0.4 to 1.2 dL/g measured at 25°C in a 60/40 ratio by weight of phenol/tetrachloroethane and comprises:
 - (1) diacid residues comprising at least about 50 mole percent of residue of a diacid selected from 1,4-cyclohexanedicarboxylic acid, terephthalic acid and isophthalic acid or a mixture thereof; and
 - (2) diol residues comprising at least about 50 mole percent of ethylene glycol residues, cyclohexanedimethanol residues, or a mixture thereof;
- (B) about 0.1 to 0.5 weight percent of at least one ~~phosphite ester~~ phosphorus-containing compound based on the total weight of the composition; and
- (C) about 0.1 to 1.0 weight percent of at least one hindered amine light stabilizer based on the total weight of the composition having the formulas:









wherein

R_4 , R_5 , R_6 , and R_7 are independently selected from hydrogen, C_1 - C_{22} -alkyl, substituted C_1 - C_{22} -alkyl, C_3 - C_8 -cycloalkyl, substituted C_3 - C_8 -cycloalkyl, heteroaryl, and aryl;

R_8 is selected from hydrogen, $-OR_6$, C_1 - C_{22} -alkyl, substituted C_1 - C_{22} -alkyl, C_3 - C_8 -cycloalkyl, and substituted C_3 - C_8 -cycloalkyl;

R_{10} and R_{11} are independently selected from hydrogen, C_1 - C_{22} -alkyl, substituted C_1 - C_{22} -alkyl, C_3 - C_8 -cycloalkyl, and substituted C_3 - C_8 -cycloalkyl; R_{10} and R_{11} collectively may represent a divalent group forming a ring with the nitrogen atom to which they are attached;

L_1 is a divalent linking group selected from C_2 - C_{22} -alkylene, $[[;]]$ $-(CH_2CH_2-Y_1)_{1-3}$ - CH_2CH_2- , $[[;]]$ C_3 - C_8 -cycloalkylene, $[[;]]$ arylene, and $[[; \text{ or}]]$ $-CO-L_2-OC-$;

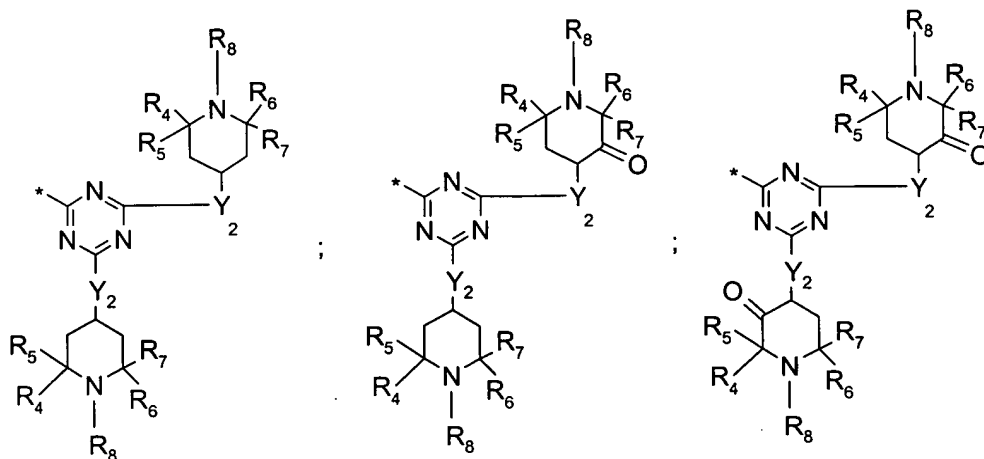
Y_2 is selected from $-O-$ ~~or~~ and $-N(R_4)-$;

Z is a positive integer of up to about 20, ~~preferably up to about 6~~;

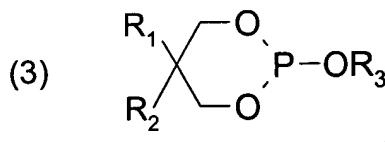
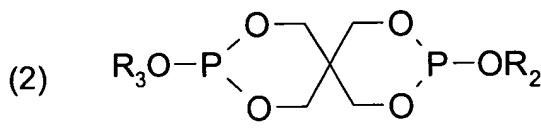
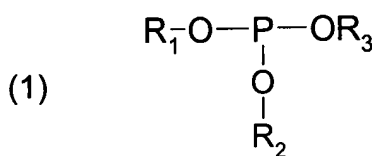
$m1$ is selected from 0 to about 10;

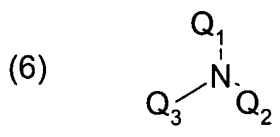
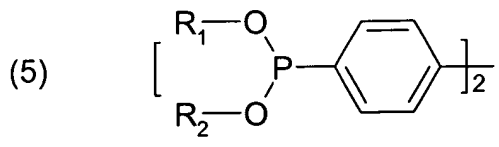
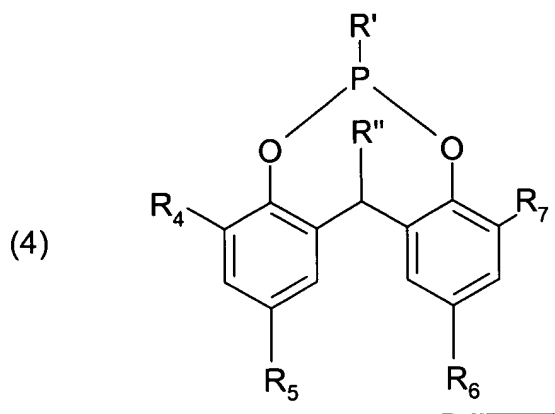
$n1$ is a positive integer selected from 2 to about 12;

R_{12} $[[;]]$ and R_{13} are independently selected from hydrogen, C_1 - C_{22} -alkyl, substituted C_1 - C_{22} -alkyl, heteroaryl, aryl, and radical B wherein radical B is selected from the following structures:



~~Radical B structures~~ wherein * designates the position of attachment [[.]] and wherein at least one of R_{12} and R_{13} is radical B; and
 (D) at least one polycarbonate,
 wherein the phosphorus-containing compound is selected from the formulas (1) - (6):





wherein

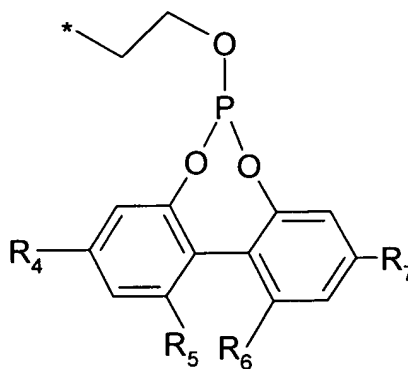
R₁, R₂ and R₃ are independently selected from C₁-C₂₂-alkyl, substituted C₁-C₂₂-alkyl, C₃-C₈-cycloalkyl, substituted C₃-C₈-cycloalkyl, and heteroaryl;

R' is selected from halogen and OR₁;

R'', R₄, R₅, R₆, and R₇ are independently selected from hydrogen, C₁-C₂₂-alkyl, substituted C₁-C₂₂-alkyl, C₃-C₈-cycloalkyl, substituted C₃-C₈-cycloalkyl, heteroaryl, and aryl;

each Q₁, Q₂ and Q₃ group independently is radical A, wherein radical A has the following structure:

Radical A =



Claim 15 (original): The polymer blend of Claim 14 wherein R_8 is hydrogen or alkyl for the hindered amine light stabilizer.

Claim 16 (original): The polymer blend of Claim 14 wherein the at least one hindered amine light stabilizer contains an sp^3 -hybridized nitrogen atom that is not contained within the substituted piperidine ring.

Claim 17 (original): The polymer blend of Claim 14 wherein the at least one hindered amine light stabilizer has a weight average molecular weight of greater than 1000.

Claim 18 (currently amended): The polymer blend of Claim 14 wherein the ~~phosphite~~ phosphorus-containing compound is selected from the group consisting of bis(2,4-di-*t*-butylphenyl)pentaerythritol diphosphite, distearyl pentaerythritol diphosphite, and bis-(2,4-dicumylphenyl) pentaerythritol diphosphite.

Claim 19 (currently amended): The polymer blend of Claim 18 wherein said ~~phosphite ester~~ phosphorus-containing compound is distearyl pentaerythritol diphosphite.

Claim 20 (currently amended): The polymer blend of Claim 18 comprising from about 0.15 to 0.35 weight percent of the ~~phosphite ester compounds~~ phosphorus-containing compound and from 0.1 to about 0.75 weight percent of the hindered amine light stabilizer, based on the total weight of the polymer blend.

Claim 21 (currently amended): The polymer blend of Claim 14 wherein the polyester of component (A) has an inherent viscosity of about 0.4 to 0.8 dL/g measured at 25°C in a 60/40 ratio by weight of phenol/tetrachloroethane and comprises:

- (1) diacid residues comprising about 80 to 100 mole percent of terephthalic acid residues and about 0 to 20 mole percent of isophthalic acid residues; and
- (2) diol residues comprising about 40 to 100 mole percent of 1,4-cyclohexanedimethanol residues and about 0 to about 60 mole percent of ethylene glycol residues.

Claim 22 (currently amended): The polymer blend of Claim 14 wherein the polyester of component (A) has an inherent viscosity of about 0.4 to 0.8 dL/g measured at 25°C in a 60/40 ratio by weight of phenol/tetrachloroethane and comprises:

- (1) diacid residues comprising about 80 to 100 mole percent of terephthalic acid residues and about 0 to 20 mole percent of isophthalic acid residues; and
- (2) diol residues comprising about 55 to 80 mole percent of 1,4-cyclohexanedimethanol residues and about 20 to about 45 mole percent ethylene glycol residues.

Claim 23 (currently amended): ~~[[A]]~~ The polymer blend of Claim 14 wherein the polyester of component (A) has an inherent viscosity of about 0.4 to 0.8 dL/g measured at 25°C in a 60/40 ratio by weight of phenol/tetrachloroethane and comprises:

- (1) diacid residues comprising about 65 to 83 mole percent of terephthalic acid residues and about 35 to 17 mole percent of isophthalic acid residues; and
- (2) diol residues comprising about 80 to 100 mole percent of 1,4-cyclohexanedimethanol residues and about 0 to about 20 mole percent of ethylene glycol residues.

Claim 24 (currently amended): The polymer blend of Claim 23 wherein the polyester of component (A) comprises:

- (1) diacid residues comprising about 70 to 80 mole percent of terephthalic acid residues and about 30 to 20 mole percent of isophthalic acid residues; and
- (2) diol residues comprising about 90 to 100 mole percent of 1,4-cyclohexanedimethanol residues and 0 to about 10 mole percent of ethylene glycol residues.

Claim 25 (currently amended): The polymer blend of Claim 14 wherein the polyester of component (A) has an inherent viscosity of about 0.4 to 1.2 dL/g measured at 25°C in a 60/40 ratio by weight of phenol/tetrachloroethane and comprises:

- (1) diacid residues comprising at least about 80 mole percent of 1,4-cyclohexanedicarboxylic acid residues; and
- (2) diol residues comprising at least about 80 mole percent of 1,4-cyclohexanedimethanol residues.

Claim 26 (currently amended): The polymer blend of Claim 25 wherein the polyester of component (A) comprises:

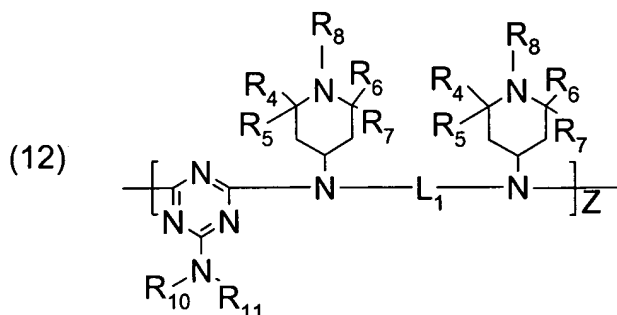
- (1) diacid residues comprising about 90 to 100 mole percent of 1,4-cyclohexanedicarboxylic acid residues; and
- (2) diol residues comprising about 90 to 100 mole percent of 1,4-cyclohexanedimethanol residues.

Claim 27 (currently amended): The polymer blend of Claim 26 wherein the polyester of component (A) comprises:

- (1) diacid residues comprising about 100 mole percent of 1,4-cyclohexanedicarboxylic acid residues; and
- (2) diol residues comprising about 100 mole percent of 1,4-cyclohexanedimethanol residues.

Claim 28 (currently amended): A polymer blend comprising a mixture of:

- (A) at least one polyester having an inherent viscosity of about 0.4 to 1.2 dL/g measured at 25°C in a 60/40 ratio by weight of phenol/tetrachloroethane and comprises:
- (1) diacid residues comprising at least about 50 mole percent of terephthalic acid residues, cyclohexanedicarboxylic acid residues or a mixture thereof; and
 - (2) diol residues comprising at least about 50 mole percent of ethylene glycol residues, cyclohexanedimethanol residues, or a mixture thereof;
- wherein the total mole percentages of diacid residues is 100 mole percent and the total mole percentages of diol residues is 100 mole percent; and
- (B) about 0.1 to 0.5 weight percent of at least one ~~phosphite-ester~~ phosphorus-containing compound selected from the group of bis(2,4-di-*t*-butylphenyl)pentaerythritol diphosphite, distearyl pentaerythritol diphosphite, and bis-(2,4-dicumylphenyl) pentaerythritol diphosphite, based on the total weight of the blend; and
- (C) about 0.1 to 1.0 weight percent of at least one hindered amine light stabilizer based on the total weight of the composition having the formula:



wherein $R_4 = R_5 = R_6 = R_7 = R_8 = \text{methyl}$, $(R_{10})(R_{11})N$ - collectively represent morpholino, L_1 is C_1 to C_6 alkylene, and Z is 1 to 6; and

(D) at least one polycarbonate.

Claim 29 (currently amended): The polymer blend of Claim 28 comprising from about 0.15 to 0.35 weight percent of the ~~phosphite-ester~~ phosphorus-containing compounds and from 0.1 to about 0.75 weight percent of the hindered amine light stabilizer, based on the total weight of the polymer blend.

Claim 30 (currently amended): [[A]] The polymer blend according to Claim 28 wherein the polyester of component (A) comprises:

- (1) diacid residues comprising about 80 to 100 mole percent of terephthalic acid residues, about 0 to 20 mole percent of isophthalic acid residues; and
- (2) diol residues comprising about 55 to 80 mole percent of 1,4-cyclohexanedimethanol residues and about 20 to 45 mole percent of ethylene glycol residues;

wherein the total of the diacid residues is equal to 100 mole percent and the total of the diol residues also is equal to 100 mole percent.

Claim 31 (currently amended): [[A]] The polymer blend according to Claim 28 wherein the polyester of component (A) comprises:

- (1) diacid residues comprising about 70 to 80 mole percent of terephthalic acid residues, about 30 to 20 mole percent of isophthalic acid residues; and
- (2) diol residues comprising about 90 to 100 mole percent of 1,4-cyclohexanedimethanol residues and about 0 to 10 mole percent of ethylene glycol residues;

wherein the total of the diacid residues is equal to 100 mole percent and the total of the diol residues also is equal to 100 mole percent.

Claim 32 (currently amended): [[A]] The polymer blend according to Claim 28 wherein the polyester of component (A) comprises:

- (1) diacid residues comprising at least about 90 mole percent of 1,4-cyclohexanedicarboxylic acid residues; and
- (2) diol residues comprising at least about 90 mole percent of 1,4-cyclohexanedimethanol residues;

wherein the total of the diacid residues is equal to 100 mole percent and the total of the diol residues also is equal to 100 mole percent.

Claim 33 (currently amended): The polymer blend of Claim 28 wherein said ~~phosphite ester~~ phosphorus-containing compound is distearyl pentaerythritol diphosphite.

Claims 34-67 (canceled)

Claim 68 (new): The polymer blend of claim 1 wherein the polycarbonate is derived from bisphenol A.

Claim 69 (new): The polymer blend of claim 5 wherein the polycarbonate is derived from bisphenol A.

Claim 70 (new): The polymer blend of claim 14 wherein the polycarbonate is derived from bisphenol A.

Claim 71 (new): The polymer blend of claim 28 wherein the polycarbonate is derived from bisphenol A.

Claim 72 (new): A polymer blend comprising:

- (A) at least one polyester;
- (B) at least one phosphorus-containing compound;
- (C) at least one hindered amine light stabilizer; and
- (D) at least one polycarbonate,

wherein the phosphorus-containing compound and the hindered amine light stabilizer are added to the blend via separate concentrates.